

## In the United States Patent and Trademark Office

Appn. Number: \_\_\_\_\_

Appn. Filed: \_\_\_\_\_

Applicant(s): Berchert + Hartzell

Appn. Title: Method of Precisely Determining The location of a

Examiner/GAU: \_\_\_\_\_ 1324 Fault -

Mailed: with Application

At: \_\_\_\_\_

### Information Disclosure Statement

Commissioner of Patents and Trademarks  
Washington, District of Columbia 20231

Sir:

Attached is a completed Form PTO-1449 and copies of the pertinent parts of the references cited thereon.  
Following are comments on these references pursuant to Rule 98:

Patents which describe systems that monitor voltage and/or current waveforms generated by arcing or discharge fault events are:

Biskeborn, U.S. Pat No 2,493,800, 1950,  
Weintraub, U.S. Pat No 2,717,992, 1955,  
Biskip, U.S. Pat No 3,462,681, 1969

Patent to Pardis, U.S. Patent No. 3,609,533, 1971, describes a fault location system which utilizes a high energy pulse transmitted on the network under test

Patent to Maureira, U.S. Pat No 5,416,418, 1995, describes application in lower voltage, (ie. 6kV to 33kV), distribution cables, and focuses on partial discharge events using a pulse transmission technique as a reference/timing signal.

Patent to Bjorklund, 5,903,155 describes the same fundamental process that Biskeborn, Weintraub, Biskip, Pardis and Maureira use.

Patent to Wright et al 4,499,417 describes a single ended system that uses the disturbance created by the fault and subsequent reflections.

Patent t Bunch 4,570,231 describes the same

fundamental process that Biskeborn, Weintraub, Biskip, Pardis and Maureira uses.

Patent to Burnett 5,243,294 discloses a complex system for determining the likelihood of a physical anomaly in an elongate, electrically conductive member, such as an oil or gas pipeline. The technique is based on sending two pulses from either end of the physical body to be evaluated.

Patent to Bellis et al 4,491,782 describes improvement to Time Domain Reflectometry, also known as Pulse Echo. This patent is targeted to unstable, transitory faults, as well as stable faults in energized power cable.

Patent to Walsh 5,382,910 describes improvement to Time Domain Reflectometry by canceling out the blind spot or dead zone inherent in any TDR system during the transmission of the test pulse.

Patent to Oberg et al. 5,751,149 describes improvement to Time Domain Reflectometry by implementing a very high and adjustable frequency transmit pulse to allow frequency sensitive faults to be more visible to the TDR.

Patent to Westwood 5,514,965 describes improvement to Time Domain Reflectometry by using new technology, a digital, programmable delay generator device as a TDR timebase to improve resolution of fault reflections.

SINCERELY,

  
JAMES D. WELCH

REG. NO. 31,216

LIST OF PRIOR ART CITED BY APPLICANT  
(Use several sheets if necessary)

APPLICANT

Borchert et al.

FILING DATE

GROUP

## U.S. PATENT DOCUMENTS

EXAMINER INITIAL	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
AA	2493800	1/1950	Biskeborn			
AB	2717992	9/1955	Weintraub			
AC	3462681	8/1969	Dishup	324	52	
AD	3609533	9/1971	Pardis	324	52	
AE	5416418	5/1995	Mauveira et al.	324	535	
AF	5903155	5/1999	Bjorklund	324	522	
AG	4570231	2/1986	Burch	364	492	
AH	5243294	9/1993	Burnett	324	535	
AI	4491782	1/1985	Bellis et al.	324	52	
AJ	5751149	5/1998	Obers et al.	324	533	
AK	4499417	2/1985	Wright et al.	324	52	

## FOREIGN PATENT DOCUMENTS

	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
						YES	NO
AL							
AM							

## OTHER PRIOR ART (Including Author, Title, Date, Pertinent Pages, Etc.)

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EXAMINER

DATE CONSIDERED

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Form PTO-1449  
REV. 7-88

U.S. DEPARTMENT OF COMMERCE  
PATENT AND TRADEMARK OFFICE

ATTY. DOCKET NO.	SERIAL NO.
APPLICANT <i>Borchert et al.</i>	
FILING DATE	GROUP

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(Use several sheets if necessary)

U.S. PATENT DOCUMENTS

EXAMINER INITIAL	DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE
AA	5514965	5/1996	Westwood	324	533	
AB	RE35561	7/1997	Maritz et al	324	520	
AC	5382910	1/1995	Walsh	324	533	
AD						
AE						
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FOREIGN PATENT DOCUMENTS

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